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Published in:
European Societies

DOI:
10.1080/14616690802588066

European Societies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713685208

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First published on: 23 March 2009

To cite this Article Jacob, Marita and Tieben, Nicole(2009) 'SOCIAL SELECTIVITY OF TRACK MOBILITY IN SECONDARY SCHOOLS', European Societies, 11: 5, 747 — 773, First published on: 23 March 2009 (iFirst)
To link to this Article: DOI: 10.1080/14616690802588066
URL: http://dx.doi.org/10.1080/14616690802588066

European Societies
11(5) 2009: 747–773
© 2009
Taylor & Francis
ISSN
1461-6696 print
1469-8307 online

Routledge
Taylor & Francis Group

SOCIAL SELECTIVITY OF TRACK MOBILITY IN SECONDARY SCHOOLS

A comparison of intra-secondary transitions in Germany and The Netherlands

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ABSTRACT: Previous research has shown that track mobility during secondary education is influenced by parental background. However, family background effects might vary due to institutional variations in the educational structure. Therefore, in our paper we compare social selectivity of track mobility in two countries, Germany and The Netherlands. Both countries offer a hierarchically tracked educational system, but differ in details. Further, both countries established educational reforms in the late sixties, changing the conditions for track mobility differently. In our empirical analyses using data from the Family Survey Dutch Population and the German Life History Study we find that changing to a higher track is more likely for students who face the threat of status demotion, whereas changing to a lower track is independent of status maintenance motives. Intra-secondary transitions occur less often in The Netherlands than in Germany and are less motivated by status maintenance. Educational legislation reduces the effects of relative education of the parents only on upward mobility in Germany and only on downward mobility in The Netherlands.
Key words: secondary education; educational system; social selectivity; track mobility; transition research

1. Introduction

In most European educational systems students have to decide between different tracks within secondary education. A division into vocational and general higher secondary tracks after lower secondary school is common in, e.g., Sweden, Italy and Germany. In the German-speaking countries and in The Netherlands, general secondary education is tracked as well and the division into several hierarchically ordered tracks takes place after

DOI: 10.1080/14616690802588066

primary school. Proponents of this tracked structure claim that students are allocated according to their performance. Another advantage of tracked systems is that a homogenous performance level can be reached within schools (cf. Gamoran and Mare 1989; Hallinan 1996). Several empirical studies on social inequality at the entry into (lower) secondary education, however, unequivocally come to the conclusion that tracked educational systems tend to be highly selective at a very early age and that the track entered after primary school largely determines the subsequent educational career (e.g., Baumert *et al.* 2001; Breen and Jonsson 2000, for Sweden; Lucas 1999, for USA). However, a requirement to correct track placement can arise from an erratic initial allocation or from an unexpected development of the learning progress after entry into secondary education. Thus, initial track allocation is not necessarily the final destination, as mobility between tracks is possible.

From the perspective of social stratification the issue of track mobility becomes particularly relevant when corrections of initial track placement occur in a socially selective way and thus either serve to secure advantages of privileged groups or to compensate for disadvantages. Previous research has shown that, for example, in Germany the likelihood of children from privileged families to make upward transitions is above average, either before or after their first diploma (Henz 1997a,b; Hillmert and Jacob 2005). In our paper we extend this research by using the parents' educational level in relation to the child's track placement and the child's educational attainment. In other words, we compare parental education with the initial track placement and the first attained schooling degree, and argue that corrections of the initial track are carried out in particular when the track placement of the student is lower than the educational attainment of the parents. Hence, we test if the assumption of a relative risk aversion (Breen and Goldthorpe 1997) holds for intra-secondary mobility in the same way as for the scheduled transition between primary and secondary education.

To examine the influence of the institutional setting on that particular educational decision, we compare two countries, Germany and The Netherlands. By comparing two hierarchically tracked educational systems we will answer the question whether and in what respect *social selectivity of track mobility differs in the two countries* due to different institutional structures.[1] Germany and The Netherlands qualify for such a comparison because the two educational systems bear comparable features in lower secondary general education. Both systems offer hierarchically ordered

1. Previous research has shown that the effects of family background on *final educational attainment* appear to be considerably lower in The Netherlands than in Germany (Shavit and Blossfeld 1993; Prenzel *et al.* 2004: 24; Breen *et al.* 2005).

tracks, with possibilities to upgrade one's educational career by changing to a more demanding and prestigious track or to downgrade to a lower track. Even after having completed a particular track successfully, the final (secondary) educational level may be attained later by completing a higher track. However, the two systems differ in detail, for example, regarding track-allocation criteria, curricula or spatial separation of the different schools. Furthermore, we investigate in how far educational reforms with the aim to increase permeability between tracks and reduce educational inequality in both countries had different effects on the social selectivity of track mobility.

In the following we will give a short introduction of the micro-theoretical background, outline the two educational systems and their changes during the past decades, and derive hypotheses concerning selectivity of track mobility in both countries and their changes over time. In chapter four we will test our hypotheses using data from the German Life History Study and the Family Survey of the Dutch Population.

2. Theoretical background

2.1. Educational decisions and intra-secondary transitions

2.1.1. The rational choice approach for educational decisions: Acknowledging that there are social differences in schooling performance due to the different distribution of cultural and educational resources in the family of origin – so-called 'primary' effects (e.g., Boudon 1974; De Graaf 1984; De Graaf *et al.* 2000) – rational choice theory concentrates on the parameters influencing educational decisions beyond measured performance ('secondary' effects). The rational choice approach assumes that individuals make their educational decisions based on the perceived ratio of utility, costs and risk (cf. Erikson and Jonsson 1996; Breen and Goldthorpe 1997). Regarding costs of education, children with a high socioeconomic background profit from material resources which enable their parents to bear the direct and indirect costs of education. Further, highly educated parents consider the risk of failure in higher education more realistic and lower than parents who have not attended higher education. Extending this theoretical approach, the core argument of more recent approaches to explain social differences in decisions is the relative risk aversion (Breen and Goldthorpe 1997; Need and Jong 2001; Davies *et al.* 2002; van de Werfhorst and Andersen 2005; Breen and Yaish 2006; Stocké 2007): individuals avoid downward social mobility respectively strive to maintain the family's social position across generations. In the same way, this mechanism of relative risk aversion prevents children from lower educated

parents to strive for an education higher than necessary to maintain their family's status, because the utility of a higher educational attainment would not outweigh the additional cost.

Status maintenance can best be guaranteed by pursuing an educational level that maximizes the chance to receive the same status. Following Breen and Yaish (2006) who discuss the difficulty of accurately proxying the beliefs of students about which level of schooling might be sufficient to reproduce the social status of their parents, we assume that students have only a limited (myopic) view on the returns to their educational attainment and their future class position. Focussing on parental education as the relevant factor for decisions regarding secondary school is empirically supported by analyses of van de Werfhorst and Andersen (2005) for the US showing that intergenerational changes in the value of education for the labour market only have an impact on the decision to enter tertiary education but not on earlier transitions. Similar results are found by van de Werfhorst (2005) for Dutch data.

The rational choice approach has largely been used for the 'standard' transitions within educational systems, namely those from primary to secondary education and from secondary to tertiary education (e.g., Jackson *et al.* 2007). However, the central parameters of the theory can also be applied to the decision-making process for transitions *within* secondary education in a hierarchically tracked system: previous research showed that high status parents indeed strive for a higher initial track placement of their children and in most cases successfully, but in educational systems where track allocation is mainly performance driven, students may be allocated to a track below their own respectively their parents' aspirations. The 'rational' desire for a certain track placement thus can be frustrated by institutional constraints and lead to an 'irrational' track placement. Obtaining a graduation from this track would be a serious threat to status maintenance, which is a strong incentive to strive for a correction of the initial track. On the other hand, a student may also be initially placed in a track which is appropriate for status maintenance but emerges to be too demanding. In cases of a mismatch between performance, actual track allocation and desired track allocation, therefore the need or desire for a correction of track placement can emerge. In the case of over-performance the question arises whether to change to a more demanding track leading to a higher graduation that might now be appropriate for status maintenance. In the case of under-performance of the student, changing to a lower track can restore the match between performance and track level but also bears a high risk of status demotion. In the following, we describe the different types of intra-secondary transitions and their consequences in more detail. Against this background we finally discuss social selectivity in track mobility.

2.1.2. Intra-secondary transitions and social selectivity: We define three types of intra-secondary transitions. Students can either change tracks before they obtain a first graduation or afterwards. *Upgrades* and *downgrades* occur before graduation while a *supplement diploma* can be attained after graduation from a lower track. In the following we outline these different options.

Downgrading is mainly an option when the current educational track is too demanding and the student is at risk to fail the term. Changing to a lower and less demanding track disburdens the student and increases his/her chance to complete the term and to continue education successfully. A quite common alternative to downgrades is grade retention, i.e., staying in the current track, repeating the term and continuing afterwards. Grade retention bears the additional direct and indirect costs of one more year in education, while downgrading in most cases even reduces schooling years. In order to come to a decision, the student has to balance the risk of status demotion against the direct and indirect costs of one additional year of education. As discussed above, we assume that parents strive to ensure at least the same educational level for their children as their own. Hence a student who would end up in a lower track than the secondary educational level of the parents is more likely to repeat the term instead of downgrading, while students who already are in a higher track than their parents are probably less eager to stay and rather avoid the additional costs.[2]

Upgrading is an option for students whose performance is above expectations. A higher secondary diploma is particularly attractive if the parents' educational level cannot be reached in the current track. But upgrading also bears several costs. First, as the curriculum is more demanding than in the track previously attended, the risk of failure increases and the student has to make efforts to catch up with the higher level. Second, transaction costs usually involve changing the familiar environment and getting acquainted with a new situation, teachers, friends, etc. Third, higher tracks are longer and thus involve more direct and indirect costs. In sum, upgrading has a lot of drawbacks which might prevent children from taking this step.

Supplement diplomas are an alternative to upgrading. A student can graduate in the current track and attain a '*supplement diploma*' afterwards. Compared with an upgrade, supplement diplomas *after* first graduation are a 'safe' option as the lower track has already been completed. If the

2. One might also assume that parental support to improve a child's school performance also differs between different parental backgrounds. These 'primary' effects of social origin would not alter our expectations but strenghten the relative advantages of children with relatively higher educated parents for upgrading.

student fails s/he has no risk of leaving education without any diploma. However, as the learning progress is faster in the higher track the gap between students in different tracks grows over time (Gamoran and Mare 1989; Hallinan 1996). Therefore, the effort of catching up might be higher the longer the student waits. So in their decision between upgrade and supplement, students have to balance the lower risk of failure of an early transition against the higher transaction costs, and they have to trade in the 'safe' option of easily obtaining a lower graduation.

To summarize, under- and over-performance each offer two alternatives how to proceed in secondary school. We argue that the decision for either alternative is at least partly driven by motives of status maintenance, which are working independently of performance. A core point in these decisions is risk aversion: if intergenerational status maintenance is threatened either by underperformance or by lower initial track placement of the child, parents will prefer the alternative which enables them to maintain or reach the desired educational level.

These arguments lead us to the following general *hypotheses on social selectivity of track mobility*: children who would experience status demotion by downgrading are less likely to downgrade than children who will not descend by downgrading from the current track. Vice versa, children who cannot reach the secondary educational level of their parents in the current track are more likely to upgrade or to take a supplement.

2.2. Social selectivity in intra-secondary transitions in Germany and The Netherlands

2.2.1. The institutional setting of the German and the Dutch education system:
2.2.1.1. GERMANY Despite being different in detail, the structure of the educational system of Germany is standardized in general lines throughout all 16 federal states (schematic illustration of the education system see Figure 1). Compulsory education starts at the age of six years, when children enter primary school, which usually lasts four years. At the age of ten most students have to choose between three different tracks: *Volks-/Hauptschule*, *Realschule,* and *Gymnasium*. *Volks-/Hauptschule* is the least demanding and least prestigious track. It lasts for five years. *Realschule* takes six years and is more demanding than *Hauptschule*; it leads to an intermediate secondary qualification. *Gymnasium* offers a nine-year pre-academic course.[3] This track is the most demanding and most

3. Besides the classical *Gymnasium*, there are also vocationally oriented *Gymnasien*, which offer a more specific education. The premises for obtaining the Abitur are almost the same, therefore we do not distinguish between general and vocational *Gymnasium*.

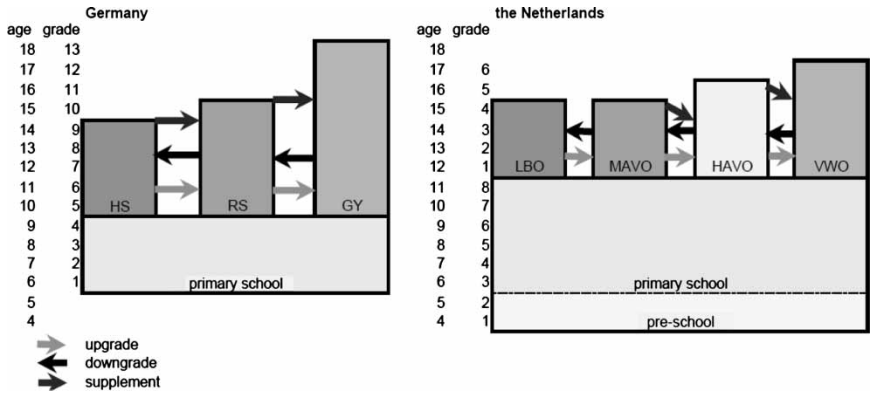

Figure 1. Schematic illustration of the Dutch and the German educational systems and the possibilities to upgrade, downgrade and supplement.

prestigious track in Germany. Graduation from the *Gymnasium*, the *Abitur*, qualifies students for access to all post-secondary and tertiary institutions.

2.2.1.2. THE NETHERLANDS Most Dutch students enter the educational system at the age of four since pre-school and primary school were centralized to form the *basisonderwijs* in 1984. Full compulsory schooling begins at the age of six, pupils will then remain for six years in primary education and choose between four different tracks (*LBO, MAVO, HAVO, VWO*) afterwards (see Figure 1). The structure and contents of these tracks resemble those of the German educational system, with *LBO* (four years) and *MAVO* (four years) being equivalent to *Hauptschule* and *Realschule*, and *VWO* (six years) being equivalent to *Gymnasium*. The only exception is *HAVO* (five years), which offers intermediate general education but qualifies students for direct entry into lower tier tertiary education (vocational colleges). Universities give admission only to *VWO* graduates.

2.2.1.3. REFORMS In both countries, educational reforms at the end of the 1960s had the aim to make the educational systems more flexible and to facilitate intra-secondary transitions (for an overview see Cortina *et al.* 2003: 138f; van der Heiden 2004). For example, early tracking was postponed by the introduction of intermediate years, and track allocation was improved by teacher recommendations after primary education. Also, the strict separation of tracks was loosened by converging curricula. This reduced the effort of catching up on the more advanced level in case of an upgrade or supplement and made these less risky. However, in both countries, these reforms were not established consistently and are still partly restricted to regions or federal states.

Summing up, both educational systems are similar regarding rather early track differentiation compared to other European countries. Hence, the two systems qualify for comparison by showing how minor variation in the rigidity of track differentiation influences the impact of social origin on educational choices (here: on track mobility during secondary school). Against the background of an ongoing German discussion about providing more permeability between tracks (Rösner 1997; Rösner and Mauthe 1998) and the current efforts of some federal states to combine Haupt- and Realschule into one organisational or even comprehensive unit, taking The Netherlands as a comparable case might give valuable insights.

2.2.2. Social selectivity in a comparative perspective: The educational reforms probably had ambiguous effects on track mobility. The improved opportunity to supplement after first graduation is an alternative to early upgrading and may cause students to postpone an upgrade. Besides, both countries improved initial track allocation and thereby probably reduced erratic placement and the need for corrections. As a result of increased participation in higher tracks the (statistical) risk to upgrade decreases even further while the risk to downgrade increases over time. On the other hand, track mobility was facilitated through the harmonization of curricula in both countries. It is therefore hardly possible to predict how far the quantity of intra-secondary transition has changed over time.

However, the harmonization of the curricula in both countries removed academic barriers for upward corrections by reducing the efforts to catch up. Upgrading and supplements became less risky and therefore more attractive for students who were not driven by status maintenance. This leads us to the *hypothesis on social selectivity over time*: social selectivity of upgrades and supplements decreases over time (after reforms) in both countries.

Nevertheless, Germany and The Netherlands differ with respect to the pathways to a supplement. In Germany, students can continue in the subsequent term right away, while Dutch students have to repeat one year in the higher track.[4] The advantage of the latter might be that the risk of failure in The Netherlands is smaller because students get prepared for the challenges of the higher track in the repetition year. This advantage might

4. To be eligible for a supplement, certain conditions have to be fulfilled. The premises vary between federal states, but in general a successful completion of lower or medium secondary school is necessary. This is usually the case when an average grade-level has been achieved in the main subjects. For example, to be eligible to attend classes for a supplement after Hauptschule, besides having achieved certain grades of previous graduation students have to fulfil additional requirements, like additional classes in maths and in a foreign language. The prerequisites to obtain a supplement after Realschule are similar.

be offset by the increased opportunity costs of the additional year, though. Replacing one obstacle by another probably results in a stable selectivity of supplements in The Netherlands.

From these considerations we derive the following *hypotheses on country differences in social selectivity of supplements*: social selectivity of supplements decreases in Germany after the introduction of the reforms, but does not decrease in The Netherlands, because the reduced transaction costs are counterbalanced by increased opportunity costs.

3. Data, operationalizations and methods

Analysing track mobility and the attainment of a second schooling certificate cannot be done by using cross-sectional data, as they usually contain only the highest educational attainment of respondents. We therefore need data on complete educational careers, including longitudinal information about transitions within and after secondary education. For Germany, the retrospective longitudinal study of the (West-) German Life History Study (GLHS) conducted by the Max Planck Institute in Berlin provides such datasets for several German birth cohorts. For our analyses we use the information of cohorts born in 1939–41, 1949–51, 1954–55, 1959–61, 1964, and 1971. We can use 6319 respondents for the empirical analyses. For The Netherlands, we use the Family Surveys Dutch Population (FSDP), a four-wave (1993, 1998, 2000, 2003) cross-section study on a representative sample of the Dutch population containing detailed information about educational careers of the respondents and their family of origin. Unlike the Life History Study, these data are not a cohort study but comprise respondents from all birth years between 1914 and 1985. Because of the differences in the data structure, we cannot pool both datasets and analyse the countries simultaneously. All analyses are therefore run separately for Germany and The Netherlands. In order to ensure comparability between the two datasets as far as possible, we excluded all those respondents from the Dutch data who were born before 1935 and after 1970. This leaves us with 5609 respondents for The Netherlands.

We analyse transitions within the general tracks of secondary education as specified in the above description of the two educational systems, thus *Hauptschule*, *Realschule* and *Gymnasium*[5] in Germany, and *LBO, MAVO, HAVO,* and *VWO* in The Netherlands. In the German case, we also

5. Other German schools that cannot be clearly assigned to one of the tracks by attendance, such as *Gesamtschule*, *schools for special needs,* and *Reformpädagogische Schule,* are summarised as 'other schools' in the analyses.

include certificates of general education that are obtained within vocational education by passing an extra exam. In the Dutch case, upgrades, downgrades and supplements are defined analogously, but post-secondary vocational institutions like *MBO* do not offer independent general secondary qualifications.[6] In the multivariate analyses we use multinomial logistic regressions. The dependent variable consists of four categories: 'no change', 'upgrade', 'downgrade', and 'supplement'. Respondents who made a transition to the same school type, e.g., for reasons of relocation, were assigned to the 'no change' category. In the German case, transitions which could not doubtlessly be categorized as up- or downgrades, e.g., from or into a *Gesamtschule*, are called 'ambiguous transitions' and form a fifth category. The reference category is students who obtained a secondary diploma without changing tracks before or after first graduation.

The *family background* considered here is the formal education of the highest educated parent. In The Netherlands, the parents' education is operationalised by lower secondary school or less (low-educated parents), higher secondary or vocational training (medium), and tertiary education (high), whereas in Germany we use the schooling certificates of the highest educated parent: no graduation/Hauptschule (low), graduation from Realschule (medium), and Abitur (high). The motive of status maintenance (via education) is operationalised directly by using the *relative educational level* of the parents compared to the child's in a dichotomous variable: if the student enters a lower track than the final secondary graduation of the highest educated parent, the variable is coded 1, otherwise 0. Changes across time are tested with *cohort* dummies. For comparability, the respondents of the Dutch Family Survey are clustered into cohorts that grossly correspond with the cohorts of the German Life History Study. As we do not analyse separate tracks for reasons of economy, we use dummies for the *initial secondary track* chosen at the first transition from primary to secondary education. These dummies are introduced as control variables to ensure that no bias from shifting allocation distribution distorts our results. We also introduce an interaction between relative parental education and the cohorts which profited from the *educational reforms* in the late sixties/early seventies.

In order to represent students who changed tracks more than once, we constructed 'person-transition' files. The records in these files represent transitions instead of respondents so that sequential transitions can be analysed simultaneously. The relative education of the parents and the

6. Post-secondary non-tertiary educational tracks, like *MBO* in The Netherlands and *Berufsschulen/Berufsfachschulen* in Germany, are not defined as supplements if a general diploma has not been attained.

initial track can thus vary within the same respondent due to upgrades and downgrades and are adapted where necessary.

4. Results

4.1. Descriptive results

4.1.1. Initial track allocation: Probabilities for intra-secondary transitions are structured by the distribution of students into the different tracks after they leave primary school. Figure 2 shows initial track allocation in both countries by cohort. Educational expansion seems to be more dramatic in Germany than in The Netherlands. We observe a strong decrease in participation in the *Hauptschule,* and participation in the *Gymnasium* almost tripled in Germany, while the growth in *VWO* in The Netherlands is modest and seems to be offset by an increased participation in *HAVO.* With regard to the two youngest cohorts born in 1964 and 1971, the introduction of new school types like *Gesamtschule* is reflected in the German data, as more than ten percent of the respondents entered one of those.

Track allocation to intermediate and higher tracks is not only increasing over time but also depends on the educational background of the parents. In both countries initial track allocation is strongly related to parental education, but to a lesser extent in The Netherlands than in Germany (see Tables 1 and 2). Regarding the more relevant variable 'relative parents' education' for status maintenance, 524 of all students (9%) in Germany are placed initially in a lower track than their parents' educational level. In The Netherlands, the share of children attending a school below their parents' level is higher. In total, 728 students (13%) entered secondary school at a level below their parents. This indicates that initial track allocation is less driven by parental education in The Netherlands than in Germany.

4.1.2. Track mobility and educational supplements: In the German data, we observe 1646 intra-secondary transitions of the 6319 respondents. Of these respondents, 120 made more than one transition during secondary education. Pooling all transitions results in 423 upgrades, 297 downgrades, and 748 supplements.[7] In The Netherlands, we observed 908 transitions of 5553 respondents, but only 58 of these made more than one transition. In total we observe 67 upgrades, 346 downgrades and 495 supplements.

7. As we observe students with more than one intra-secondary transition, the total number of transitions exceeds the number of respondents. We also observe 178 transitions that cannot be classified as upgrade, downgrade or supplement.

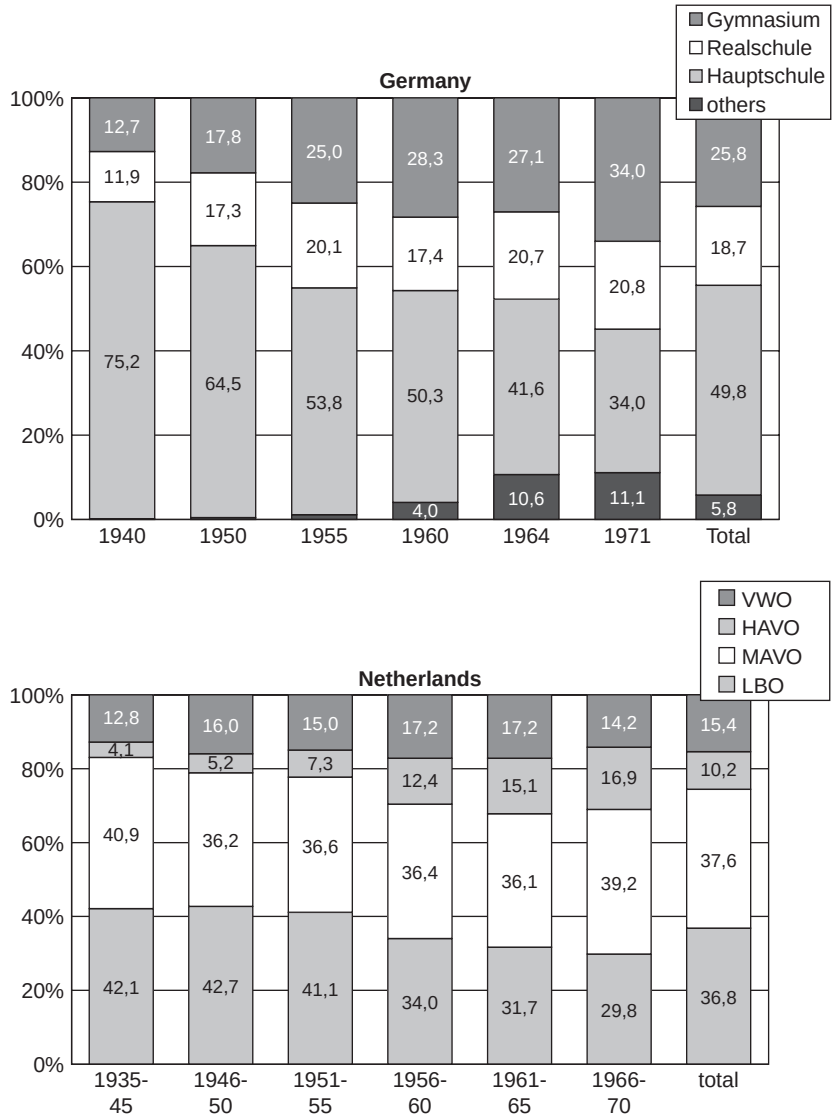

Figure 2. Secondary tracks after primary school by birth cohort.

In the following, we use the pooled data of all transitions for our analyses. Hence, the population of our analyses is not respondents, but records (episodes) in a 'person–transition' file.

Figure 3 shows the distribution of the different forms of track mobility across cohorts in Germany and The Netherlands. In Germany, the share of upgrades among all transitions increases until the 1964 cohort and

TABLE 1. Initial track choice after primary education by parents' education, Germany

Germany	*Parents' education (column percent)*				*Relative parents' education (row percent)*			
Track	*Low*	*Medium*	*High*	*Total*	*Same or lower level*	*Higher level*	*Total*	*N*
Haupt-/Volksschule	62.6	27.0	13.7	49.2	88.9	16.4	100	2956
Realschule	18.4	24.2	12.3	18.8	93.1	6.9	100	1125
Gymnasium	15.0	40.4	64.1	26.4	100.0	0	100	1628
Other schools	4.1	8.4	10.0	5.7				
Total	100	100	100	100				
N	4041	1187	782	6010				

Source: West-German Life History Study, own calculations.

TABLE 2. Initial track choice after primary education by parents' education, The Netherlands

The Netherlands	*Parents' education (column percent)*				*Relative parents' education (row percent)*			
Track	*Low*	*Medium*	*High*	*Total*	*Same or lower level*	*Higher level*	*Total*	*N*
LBO	55.8	32.5	7.8	36.2	85.5	14.9	100	1959
MAVO	33.4	42.4	29.5	37.9	83.9	16.1	100	2047
HAVO	5.5	10.8	18.8	10.3	65.9	17.3	100	557
VWO	5.3	14.2	44.0	15.6	100.0	0	100	844
Total	100	100	100	100				
N	1652	3009	746	5407				

Source: Family Survey of the Dutch Population, own calculations.

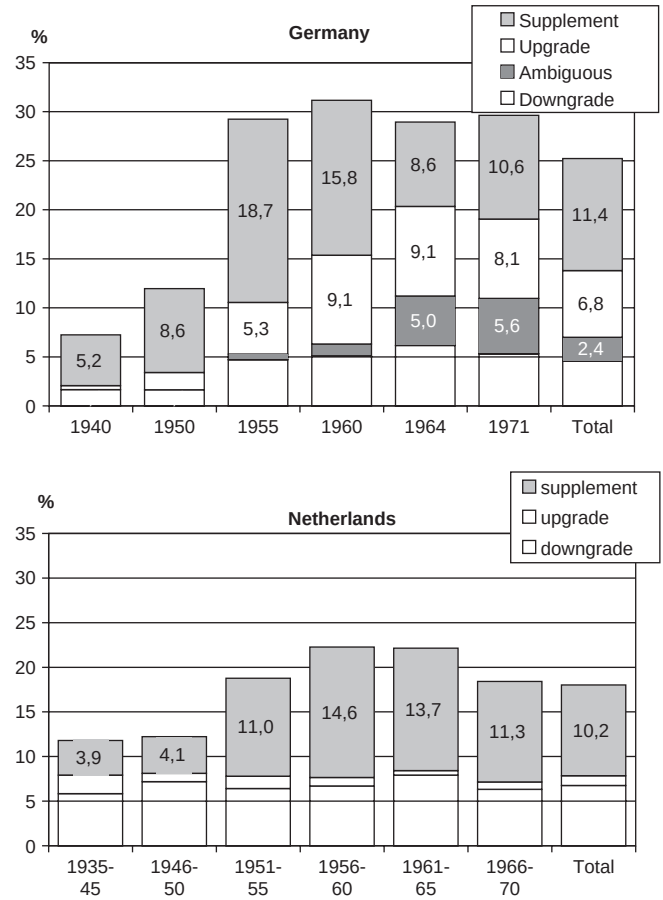

Figure 3. Distribution of intra-secondary transitions by cohort.

declines afterwards. A similar curvilinear development can be observed for the supplements and downgrades, while the share of ambiguous transitions is increasing constantly. In The Netherlands, a curvilinear trend with a peak in the 1956–60 cohorts can only be observed for supplements. We find minor fluctuations without a clear trend for downgrades and upgrades. In The Netherlands, the supplement is clearly preferred to the upgrade, while in Germany upgrades are a fairly well-established strategy to reach a higher educational level. The dynamics may be partly explained by the educational expansion in the two countries, which causes shifts in the risk populations for upgrades/supplements and downgrades. In Germany, a large proportion of the respondents was allocated to the lowest track in the oldest cohorts. Due to the increasing participation in

the medium and higher tracks, the risk group for downgrading is growing over time. In The Netherlands, the participation in intermediate tracks was at a comparatively high level in the earliest cohorts already. However, despite the decrease in risk groups for upgrades and supplements in both countries, we observe an increase in upward corrections. The demand for upward corrections has thus increased over time and was possibly even enhanced by the improved permeability after the reforms. It has to be pointed out, however, that the increase can be observed clearly before the reforms were established in both countries, namely for students born in the early to mid-fifties, which indicates that the reforms did not necessarily trigger off this boom of intra-secondary transitions. There is hardly any additional increase after the introduction of the reforms, and in the successive cohorts the number of corrections declines again.

4.1.3. Education of the parents: Considering the relative education of the parents to the child's, in Germany 45 percent of the students who are placed in a track lower than their parents change that track (Figure 4). In The Netherlands, the proportion is substantially lower, as only a quarter of students who are below their parents' education change tracks. Upward corrections clearly dominate. In both countries the rate of track mobility is considerably lower when the parental education is equal or lower than that of the student, while downgrades in particular are more likely here than in the former group.

4.2. Multivariate analyses

In the following we estimate a set of multinomial logit regressions. We ran three nested models: in the first model only sex and relative parental education are included for testing bivariately the relative risk aversion hypotheses. In the second model we add the educational level of the parents, cohort dummies and the current track. Introducing the absolute and relative education of the parents simultaneously allows us to identify the *net effect* of parents' relative education. Hence, by isolating the net effect, we derive the strength of status maintenance as motivator for intra-secondary transitions but exclude confounded effects of parental education as such, taking into consideration that only higher educated parents can have a higher relative education than their children. To test for a varying influence of parents' relative education over time, an interaction term consisting of a dummy for post-reform cohorts and relative education of parents is included in the third model. In Germany, the post-reforms cohorts are those born 1964 and 1971, in The Netherlands the cohorts 1956–60 and all later cohorts.

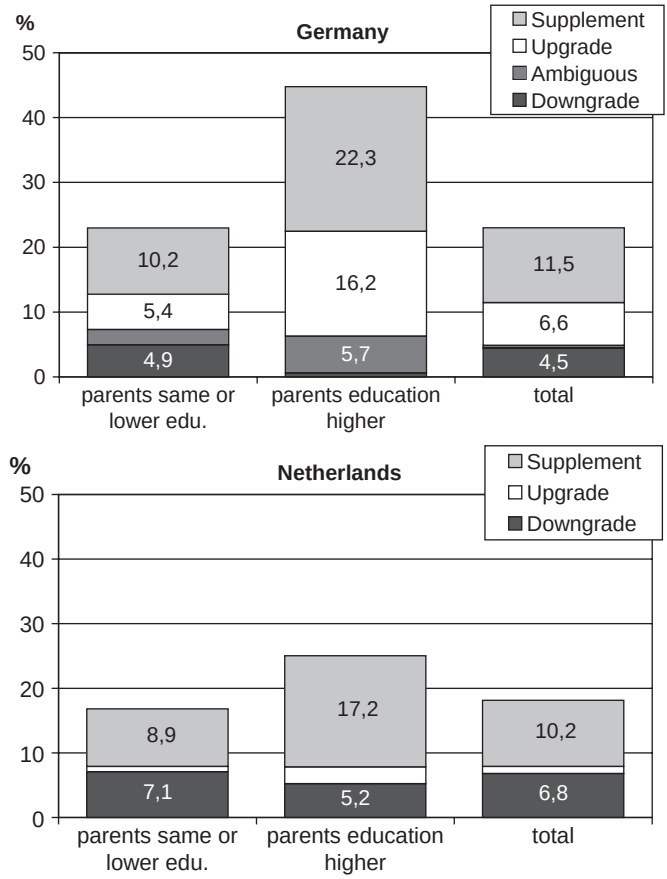

Figure 4. Intra-secondary transitions by relative education of the parents.

In Germany (Table 3), gender does not influence the relative risk to upgrade, while boys are more likely to downgrade and take a supplement than girls. As predicted, the relative education of the parents has positive effects on upward corrections (upgrade and supplement) and negative effects on downgrades.

Model I seems to confirm the hypotheses of relative risk aversion in intra-secondary transitions. The relative education of the parents has strong effects on all types of intra-secondary transitions which remain significant for upgrades and supplements under control of absolute parental education, initial track and cohort in model II. Interestingly, the upgrades in Germany especially seem to be driven by the motive of status maintenance, while it is rather the absolute education of the parents that seems to have an impact on the prevention of downgrading and taking

TABLE 3. Intra-secondary transitions (UP = upgrades, DN = downgrades, SP = supplements), multinomial regression (Odds ratios), robust standard errors, Germany

	Model I			*Model II*			*Model III*		
Germany	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*
Sex (♂)	1.000	1.460**	1.622***	.968	1.546**	1.648***	0.970	1.544**	1.648***
Education parents higher	4.146***	0.169**	3.043***	2.084**	1.337	1.551*	2.952**	1.580	2.137**
Parents' education									
Hauptschule or lower				ref.	ref.	ref.	ref.	ref.	ref.
Realschule				1.393	0.721*	1.600**	1.382	0.719*	1.576**
Gymnasium				1.848^{+}	0.505**	2.147**	1.804*	0.507**	2.104**
Cohort									
1939–41; 1949–51				ref.	ref.	ref.	ref.	ref.	ref.
1954–55				7.900***	2.131**	4.229***	8.301***	2.169**	4.404***
1959–61				16.70***	2.146**	4.215***	17.39***	2.152**	4.366***
1964				15.12***	2.763***	2.033***	17.25***	2.807***	2.330***
1971				14.35***	1.868*	2.622***	16.52***	1.902*	3.050***
Initial track resp. first graduation									
Hauptschule				0.766*	0.000	0.468***	0.775^{+}	0.000	0.475***
Realschule				ref.	ref.	ref.	ref.	ref.	ref.
Gymnasium				0.000	1.518**	0.000***	0.000	1.511**	0.000***
Other schools				0.000	0.000	0.000	0.000	0.000	0.000***
post-reform cohorts × rel. education parents							0.571*	0.679	0.509**
Pseudo R^2			0.0254			.2220			0.2231
Log pseudolikelihood			− 5359.3072			− 4278.3239			− 4271.9735

TABLE 3 (*Continued*)

	Model I			*Model II*			*Model III*		
Germany	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*
N (Events)	410	278	718	410	278	718	410	278	718
N (Episodes)			6223			6223			6223
N (Persons)			6010			6010			6010

Notes:

1. Reference category: no intra-secondary transition or lateral transition ($n = 4647$).
2. The results for unclear transitions (fourth category in analyses, $n = 170$) are not presented in the table.
3. Because of the small number of transitions the cohorts 1939–41 and 1949–51 were collapsed to be used as reference category.
4. Level of significance: *P*: $^{+} < 0.10$; $* < 0.05$; $** < 0.01$; $*** < 0.001$.
5. The odds ratios (relative risks, exp(β)) show by which factor a characteristic raises or lowers the conditional probability of a person to undertake the respective intra-secondary transition compared with the reference category. Values greater than 1 mean a risk increase, values smaller than 1 mean a risk reduction.

Source: West-German Life History Study, own calculations.

a supplement diploma. This indicates that for children who have been placed in a track which is not suitable for status maintenance indeed are pressured to change to a higher track as soon as possible.

We find a strong increase in all types of intra-secondary transitions across cohorts relative to the reference cohort (1939–41/1949–51), which is probably due to the fact that only a very small proportion of students in these cohorts makes an intra-secondary transition. Downgrades and supplements increase in the cohorts 1954–1955 and 1959–61 and decrease in later cohorts, without reaching the low level of the reference cohort. Downgrades reach a peak in the 1964 cohort and decrease for the youngest cohort as well. This indicates that the reforms did not directly trigger the incidence of intra-secondary transitions, probably because of the above mentioned counteracting forces of a better track allocation which make the correction of initial tracks obsolete. Upward corrections are most likely for students of the *Realschule*, while most downgrades occur from the *Gymnasium*. This is not particularly surprising as of course, for the lowest and the highest track ceiling effects and floor effects prevent upward respectively downward transitions, while from *Realschule* students can make upward as well as downward transitions. The incentive to upgrade from *Realschule* is quite high, regarding the gain in qualification, while an upgrade or supplement from *Hauptschule* to *Realschule* gives limited payoff. A better and more popular way to obtain an equivalent qualification would be to take additional courses during vocational education. We also assume a more psychological threshold for downgrades from *Realschule* to *Hauptschule* regarding the increasingly bad reputation of this school type. The introduction of an interaction term of the post-reform cohort and relative education of the parents reveals that the status maintenance motive plays a decreasing role in upward corrections after the reforms, while the effects on downgrades remain stable over time.

In The Netherlands (Table 4), boys have a significantly lower relative risk to upgrade, while the gender effects are not significant with respect to downgrades and supplements. Regarding the relative and absolute education of the parents, we observe similar patterns as in Germany. For upgrades, neither relative nor absolute parental education has a significant effect; it has to be acknowledged, however, that the low statistical power for this contrast ($N = 60$) might disguise inherent effects. Downgrades do not seem to be influenced by family background at all, the risk (or prevention) of downgrades thus seems to be entirely determined by the students' performance. For supplements, we find effects that resemble those in Germany, next to a strong effect of relative education of the parents we also find considerable effects of the absolute education, which indicates that supplements in The Netherlands also are partly, but not only, driven by status maintenance motives. For upgrades and

TABLE 4. Intra-secondary transitions (UP = upgrades, DN = downgrades, SP = supplements). multinomial regression (Odds Ratios), robust standard errors, The Netherlands

	Model I			*Model II*			*Model III*		
The Netherlands	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*
Sex (♂)	0.499*	0.847	0.962	0.451**	0.813	0.870	0.451**	0.813	0.870
Education parents higher	3.77***	0.689	2.347***	1.738	0.858	1.398**	1.636	0.576^{+}	1.511**
Parent's education									
Low				ref.	ref.	ref.	ref.	ref.	ref.
Middle				1.274	0.901	1.701***	1.287	0.915	1.685***
High				2.947^{+}	0.791	2.120***	2.988^{+}	0.807	2.092***
Cohort									
1935–45				ref.	ref.	ref.	ref.	ref.	ref.
1946–50				0.456	1.300	1.122	0.455	1.310	1.118
1951–55				0.709	1.221	3.257***	0.712	1.227	3.249***
1956–60				0.647	1.058	4.665***	0.651	1.056	4.668***
1961–65				0.455	1.242	4.141***	0.429^{+}	1.142	4.337***
1966–70				0.416	0.891	2.636***	0.388	0.818	2.763***
Initial track resp. first graduation									
LBO				0.409***	0.000	0.306***	0.409**	0.000	0.306***
MAVO				ref.	ref.	ref.	ref.	ref.	ref.
HAVO				0.335	1.311	0.335***	0.336**	1.309	0.335***
VWO				0.000	1.133	0.000	0.000	1.125	0.000
post-reform cohorts × rel. education parents							1.212	2.357*	0.850
pseudo R^2			0.0136			0.1367			0.1376
Log pseudolikelihood			− 3039.501			− 2660.194			− 2657.355

TABLE 4 (*Continued*)

	Model I			*Model II*			*Model III*		
The Netherlands	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*	*UP*	*DN*	*SP*
N (Events)	60	353	495	60	353	495	60	353	495
N (Episodes)			4637			4637			4637
N (Persons)			4579			4579			4579

Notes:

1. Reference category: no intra-secondary transition or lateral transition ($n = 4675$).
2. Level of significance: P: $^{+} < 0.10$; $* < 0.05$; $** < 0.01$; $*** < 0.001$.
3. The odds ratios (relative risks. exp(β)) show by which factor a characteristic raises or lowers the conditional probability of a person to undertake the respective intra-secondary transition compared with the reference category. Values greater than 1 mean a risk increase. values smaller than 1 mean a risk reduction.

Source: Family Survey of the Dutch Population, own calculations

downgrades we do not find any significant changes of incidence over time, relative to the reference cohort (1935–45), but we observe a tendency towards less upgrades and more downgrades across cohorts. For supplements we find an increase, beginning in the early 1950s, but reaching a peak in the 1956–60 cohort and a sharp decrease afterwards. As diagnosed for Germany as well this decrease in later cohorts may reflect the improved track allocation, counteracting the improved permeability. As in Germany, the middle track *MAVO* seems to be the best starting point for upward corrections, while the risk for downgrades is highest in *HAVO* and *VWO*. This is probably due to the fact that *LBO* leavers can easily obtain qualifications equivalent to a *MAVO* diploma in vocational education; the incentive to upgrade from *LBO* is thus limited, while an upgrade from *MAVO* results in useful extra qualifications. In The Netherlands we only observe a trend in effects of relative education of the parents for downgrades. After the reform the motive of status maintenance became less important for preventing downward intra-secondary transitions. Interestingly, the patterns in the trends are reverse comparing the two countries, while we find very similar patterns and magnitudes in the main effects of relative and absolute parental education between Germany and The Netherlands in model II. While in Germany the dynamics in effects of relative education are quite strong for the upward intra-secondary transitions, thus a strong decrease from a high initial level, we find weaker main effects for the pre-reform cohorts and no further decrease after the reforms in The Netherlands.

5. Summary and conclusions

In our theoretical considerations we suggested that the principle of relative risk aversion in educational decisions is applicable to intra-secondary transitions in the same way as to scheduled, institutionalised transitions. We thus proposed that students who are placed in a track below the educational level of their parents would strive to secure their parents' status by making an intra-secondary transition to a higher track. We could confirm this hypotheses only in part. For both countries we found positive effects of relative parental education on making a supplement, but only for Germany the effects for upgrades remained significant under control of cohort and initial track. The relative education of the parents does not have an influence on downgrades, neither in Germany nor in The Netherlands. However, for Germany we found negative effects of the absolute education of the parents on downgrades. While in The Netherlands downgrading seems to be entirely independent of parental

education, in Germany children of higher educated parents have advantages to prevent downgrades.

We found that the patterns in general are very similar comparing the two countries. However, the general permeability between tracks is higher in Germany than in The Netherlands. Supplements seem to be about equally popular in both countries but upgrading is a common strategy to obtain higher diplomas in Germany, while in The Netherlands only a very small percentage of upgrades could be observed. For both countries we found an increase of permeability for cohorts born after 1950.

We compared both countries to examine in how far different institutional settings affect social selectivity of intra-secondary transitions before and after educational reforms in the 1960s. Our main conclusion is that reforms were more effective in Germany than in The Netherlands. Thus, in Germany, the reforms seem to have the desired effects of removing barriers for supplements and upgrades and facilitate these. Upward intra-secondary transitions became more attractive to students who were not threatened by status demotion, while in The Netherlands, the positive effect of improved permeability has possibly been offset by increased opportunity costs for a supplement as stated in our hypotheses. On the other hand, before the reforms, the level of social selectivity was considerably higher in Germany than in The Netherlands, so we may also conclude that The Netherlands successfully follow the strategy of efficient initial track placement in order to prevent intra-secondary transitions while facilitating them where necessary. We do find, however, decreasing effects of relative parental education on downgrades in The Netherlands. While the downgrade probability used to be driven to a large extent by the relative education of the parents before the reform, this no longer seems to be a decisive factor in the decision whether to downgrade or not. In Germany, to the contrary, the relative education never had a significant influence on the downgrade probability, neither before nor after the reform. Considering the general effect of the reforms, we found that permeability indeed increased, but that this cannot directly be attributed to the reforms. A considerable increase in upward transitions has taken place immediately before the reforms came into effect and there is hardly an additional effect after their actual introduction.

To sum it up, our results complement existing comparative studies on tracking as we point out differences between similarly tracked systems regarding track mobility that may partly explain different overall educational inequalities. In both countries intra-secondary transitions are a well-established strategy to correct initial track placement, in particular by children who are placed in lower tracks than their parents' education. Track mobility is legitimized by the deficient nature of initial track allocation and should ideally serve to secure homogeneous learning

groups in all tracks. It is beyond the scope of this paper to scrutinize performance measures, but it would be worthwhile to separate different types of motivations for track mobility, like those directly related to performance and those related to relative risk aversion. Focusing on the educational system, we applied a 'supply-side' perspective on educational outcomes; however, the question if factors of the demand side of the labour market also influence educational decisions, track mobility and gaining educational supplements remains open for further research. Thus, it should be an objective for further research to (re-)model the decision of track mobility and to gather empirical data on the information and parameters students, parents – and teachers – actually use in making that decision.

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